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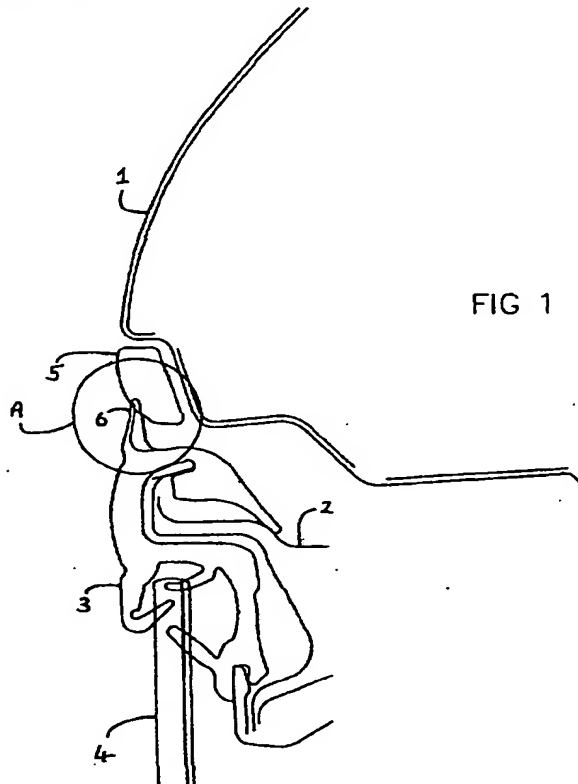
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(56) Documents Cited
GB 2233378 A EP 0601693 A1 EP 0587428 A1
US 5743047 A US 5343609 A US 4656784 A

(58) Field of Search
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INT CL⁷ B60J 10/00 10/02 10/04
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(54) Abstract Title
Glass run seal

(57) A glass run seal 3, for a vehicle door 2, is used to form seals between a vehicle body 1 and the door 2, as well as between the door 2 and a window pane 4. The seal 3 has an area (7, figure 2), on a contacting limb 6, which forms the seal between the vehicle body 1 and door 2. This area (7, figure 2) is formed using a material which is softer than that used to form the remainder of the seal 3, and helps to reduce chatter caused by the seal 3 tapping against a cant rail 5. The area (7, figure 2) of softer material may be formed from spongy EPDM, while the remainder of the seal may be formed from dense EPDM.



The claims were filed later than the filing date but within the period prescribed by Rule 25(1) of the Patents Rules 1995.

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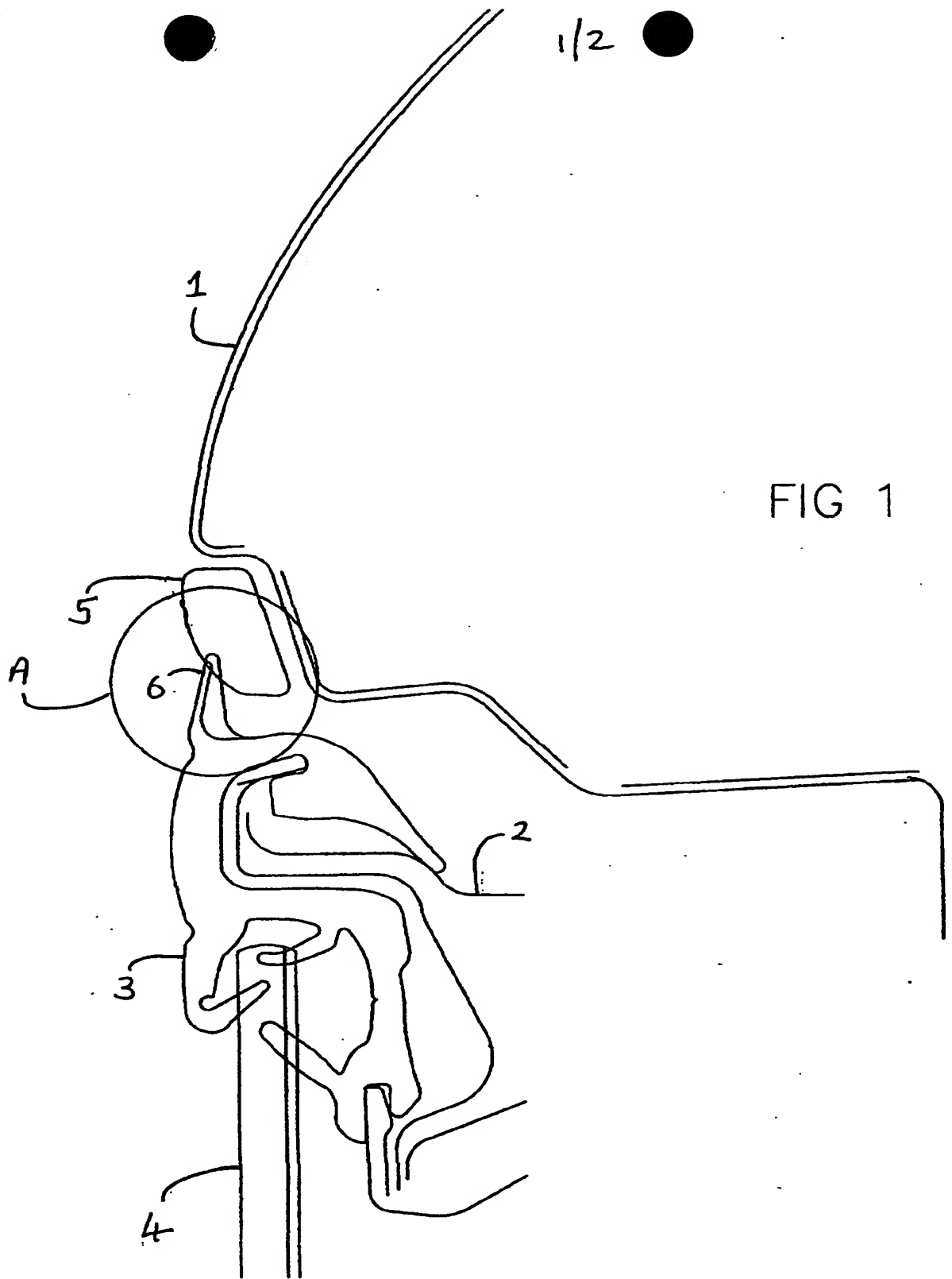
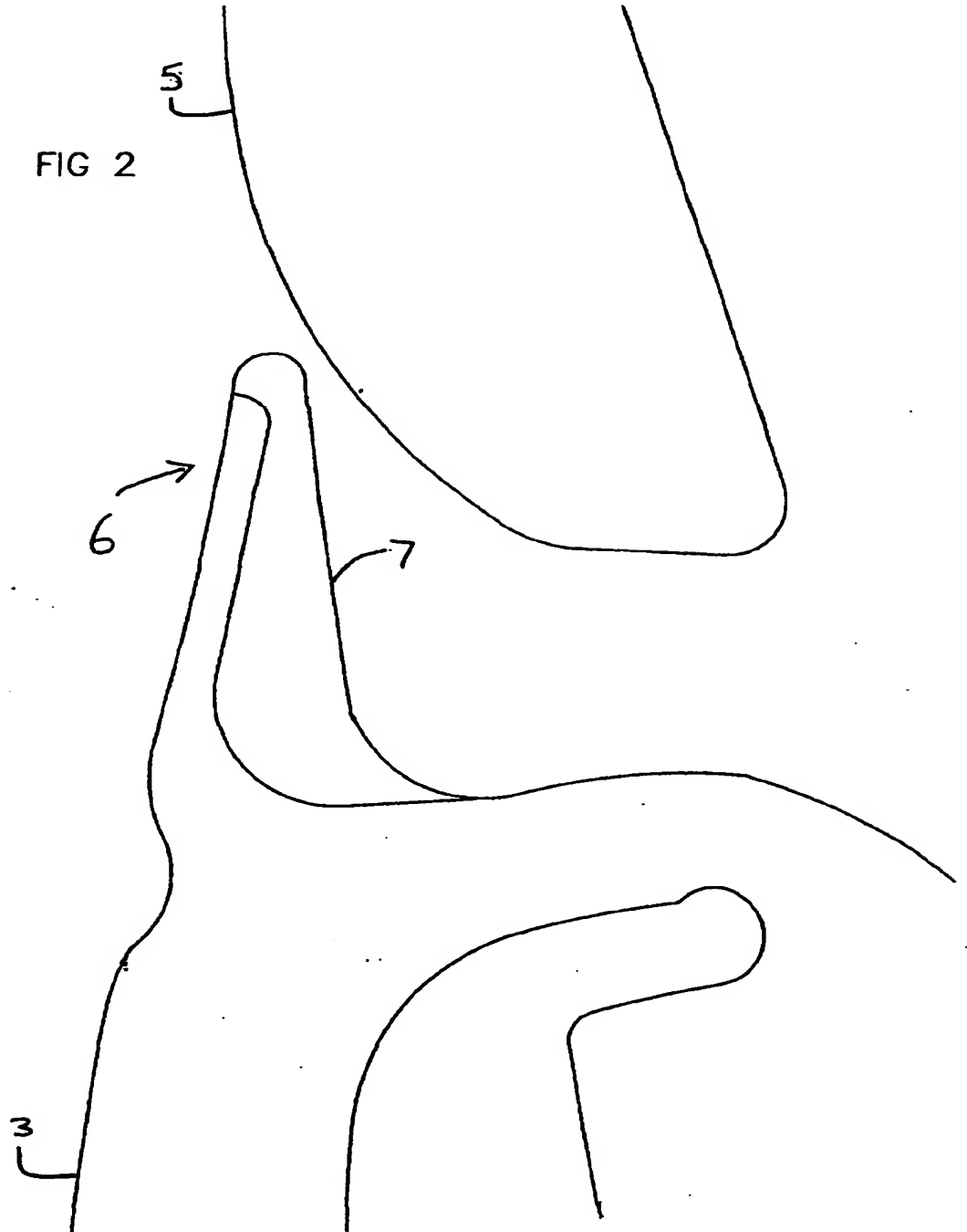


FIG 1

FIG 2



GLASS RUN SEAL

This invention relates to a glass run seal for locating on the door of a vehicle, the seal having the dual function of (a) forming a seal between the body of the vehicle and the door of the vehicle and (b) forming a seal between the door of the vehicle and a window pane fitted in the door.

When a vehicle travels over rough terrain, the portion of the glass run seal that forms the seal between the door of the vehicle and the body of the vehicle has a tendency to tap against the body of the vehicle, as a result of the fact that the door tends to move relative to the door aperture of the body. This tapping causes "chatter", i.e. an obtrusive noise which can be heard from within the vehicle and that reduces the overall noise performance of the vehicle.

According to the present invention, that portion of the glass run seal that forms the interface between the seal and the body of the vehicle is made of a material that is softer than the remainder of the glass run seal (usually EPDM, e.g. dense EPDM).

Thus the present invention provides a glass run seal for locating on the door of a vehicle, the seal having the dual function of (a) forming a seal between the body of the vehicle and the door of the vehicle and (b) forming a seal between the door of the vehicle and a window pane fitted in the door, wherein that portion of the glass run seal that forms the seal between the door of the vehicle and the body of the vehicle is made of a material that is softer than the remainder of the glass run seal.

By use of a softer material at the interface, the "chatter" is reduced or eliminated.

Reference will now be made, by way of example, to the drawings, in which:

Figure 1 is a sectional view of part of the body

and door of a vehicle, with a glass run seal fitted to the door; and

Figure 2 is an enlarged view of portion "A" of Figure 1.

5 Referring to Figures 1 and 2, there is shown part of the body 1 of a vehicle, and a flange 2 of the door of the vehicle, the latter being provided with a glass run seal 3 in which a window pane 4 fitted in the door can run.

10 The body 1 includes a cant rail trim 5 against which a contacting limb 6 of the glass run seal 3 bears when the door is closed to form a seal between the door and the body.

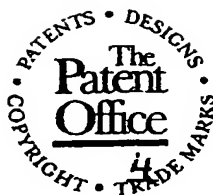
15 When the vehicle travels over rough terrain, the door tends to move relative to the body, as a result of which the contacting limb 6 of the glass run seal 3 (which is usually made entirely of dense EPDM) taps against the cant rail trim 5 (which is usually made of metal), causing "chatter".

20 According to the present invention, a part 7 of the contacting limb 6 of the glass run seal 3, is made of a softer material, e.g. a spongy material, thereby reducing or eliminating the "chatter". Also, there is a reduction in the load deflection of the contacting limb 6 of the glass run seal 3.

25 The part 7 is preferably made of spongy EPDM, preferably having a specific gravity 0.5 to 0.7, and the remainder of the seal is preferably made, at least in part, of solid EPDM, for example partly of solid EPDM having a Shore hardness of 70 and partly of solid EPDM having a Shore hardness of 90.

30 Instead of EPDM, the seal can be made of TPE or SBR.

The seal is preferably made by extrusion.



INVESTOR IN PEOPLE

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Claims searched: 1-4

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Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.R): E1J: JGN

Int Cl (Ed.7): B60J: 10/00, 10/02, 10/04

Other: Online: WPI, EPODOC, JAPIO

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
A	GB 2233378 A (Draftex) See esp. p4 line 21-	-
A	EP 0601693 A1 (Ford) See esp. abstract	-
X	EP 0587428 A1 (GENCORP) See esp. col.6 lines 12-28	1
X	US 5743047 (Bonne) See esp. col.3 lines 16-33	1
X	US 5343609 (McManus) See esp. col.4 lines 20-26	1-3
X	US 4656784 (Brachmann) See esp. col. 2 line 67- col. 3 line 2.	1

X Document indicating lack of novelty or inventive step
Y Document indicating lack of inventive step if combined with one or more other documents of same category.
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A Document indicating technological background and/or state of the art.
P Document published on or after the declared priority date but before the filing date of this invention.
E Patent document published on or after, but with priority date earlier than, the filing date of this application.